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AGAR: Consultation 1: Definition of alternative reference rate

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# 1. Introduction

The Swedish Bankers’ Association, through the Working group for alternative reference rates, has analysed the possibility of developing a complement or alternative to a reference rate. In this initial consultation, suggestions are put forward as to how an alternative reference rate (RFR) could be defined. Answers to the questions posed and any other comments should be sent to the Swedish Bankers’ Association at the e-mail address: [info@swedishbankers.se](mailto:info@swedishbankers.se) before 30 April. Questions in relation to the consultation can be sent to [jonny.sylven@swedishbankers.se](mailto:jonny.sylven@swedishbankers.se).

## 1.1. Summary of the consultation

The Working group for alternative reference rates has examined the possibility of developing a transaction-based reference rate for the SEK market with qualities similar to those of other, virtually risk-free interest rates, which are now being developed within several currency areas. No such interest rate currently exists in Sweden, so the Working group needs to review the available options. For its initial analysis, the Working group collected a large volume of transaction data. Based on this data and a number of selection criteria, two possible alternative reference rates have been defined. Both of these relate to unsecured O/N transactions with other banks, other financial institutions and the Swedish National Debt Office as counterparties. One of the interest rates identified relates to both borrowing and lending transactions (selection A), while the other rate relates only to borrowing transactions (selection B). Both these selections have significant volumes that are traded every day in the form of transactions involving most of the banks. During the examination period, which covers 774 trading days, at least 5 transactions are recorded per day. The Working group believes that these rates could serve as a new alternative reference rate.

In summary, the Working group submits the following proposals for alternative reference rates:

1. Transaction-based O/N interest rate, unsecured and with banks, other financial institutions or the Swedish National Debt Office as the counterparty, with borrowing or lending at the reporting bank.
2. Transaction-based O/N interest rate, unsecured and with banks, other financial institutions or the Swedish National Debt Office as the counterparty, with borrowing at the reporting bank.

The advantages and disadvantages of the proposed alternative reference rates can be summarised as follows.

|  |  |  |
| --- | --- | --- |
| **Proposed rate** | **Advantage** | **Disadvantage** |
| a. Trans. Borrowing and lending | Relatively large underlying volume, can be viewed as a mid-price rate | Where there is a large spread between borrowing and lending, volatility may increase |
| b. Trans. Borrowing | Same structure as other RFRs | More limited underlying volume |

## 1.2. Working group for alternative reference rates

An interbank rate must reflect the interest rates at which banks do business, in unsecured transactions and with other banks as counterparties. Interbank transactions have generally declined or disappeared completely in some cases, partly because the Lehman crisis reduced confidence between banks, and secured interbank transactions have become more common. Continued expansionary monetary policy in most currency areas, which is flooding the market with liquidity, has reduced the need for interbank transactions. The overall result is that the basis for interbank rates has shrunk. The issue was raised by the G20 in 2013, when the Financial Stability Board (FSB) was asked to review the problem of a lack of transaction data for interbank rates. In 2014, the FSB returned[[1]](#footnote-1) with two recommendations:

1. Reform existing interbank rates so that they are based primarily on transactions and the element of discretionary assessments is kept to a minimum
2. Develop virtually risk-free interest rates (RFR) as an alternative to interbank rates.

The first point concerns the Benchmarks Regulation[[2]](#footnote-2) now in force. Financial Benchmarks Sweden, a wholly owned subsidiary of the Swedish Bankers’ Association, which administers Stibor, is preparing the adjustment of Stibor to the Benchmarks Regulation. Stibor will therefore continue to serve as a reference rate for many years to come. There are no plans to end the use of Stibor as a reference rate, unlike other reference rates such as Eonia and Libor.

The second point has led to a number of activities in Europe and the USA, among other places. Central banks in the USA (FED), UK (BOE) and EU (ECB) have for some time been working to develop alternatives to interbank rates, or ibors. SOFR has been launched in the USA, SONIA in the UK and ESTER in the EU.

With new RFRs beginning to be published in other countries, it is highly likely that there will also be demand in the future for an alternative reference rate for the Swedish krona. The Benchmarks Regulation also contains a requirement for a fallback, an alternative benchmark to use if an ibor cannot be used.

Prompted by developments in other countries, the Swedish Bankers’ Association established a working group to develop alternative reference rates. The existing Stibor committee of the Swedish Bankers’ Association specified the assignment in the form of an assignment description.[[3]](#footnote-3) The Working group for alternative reference rates held its inaugural meeting on 30 November 2018. The purpose of the group is to draw up one or more reference rates that could replace or supplement Stibor in financial contracts in SEK. There are currently no plans to end Stibor and work is ongoing to have Stibor approved under the BMR. In order for a benchmark to continue to be used after 2019, the benchmark’s administrators must be authorised by the supervisory authority under the BMR. According to a press release from the European Commission,[[4]](#footnote-4) however, the transitional period for all critical benchmarks, including Stibor, has been extended until 31 December 2021.

The Working group consists of the banks that contribute to Stibor[[5]](#footnote-5). The Working group also includes the Swedish Central Bank, the Swedish National Debt Office, the Swedish Financial Supervisory Authority and the Swedish Bankers’ Association as observers. The Swedish Bankers’ Association administers the Working group. The Working group is scheduled to deliver a recommendation on one or more new reference rates at the end of 2019.

The Working group aims to draft proposed alternatives to Stibor that are in line with other global developments. The goal is to find solutions that are consistent, as far as possible, with what other working groups have developed.

A constant consideration in all the work of the Working group is compliance with international conventions as far as possible.

The most common term for an RFR, in those countries where such interest rates have been introduced, is overnight (O/N). This means that monetary policy will have a greater impact on an RFR than is currently the case with the longer Stibor rates. The relationship between the banking system and the central bank operates differently in different countries. This means that situations of stress or of more active monetary policy will have a different impact on short-term interest rates. Moving from referring to Stibor 3 months to an O/N rate will involve a change in level as well as in volatility. A description of how monetary policy is implemented in Sweden can be found on the website of the Swedish Central Bank (Riksbank)[[6]](#footnote-6) and in the Riksbank document “Riksbank monetary policy control system – general description”.[[7]](#footnote-7)

The work of the Working group is currently divided into six different areas. This division is subject to change should the conditions change. The Working group aims to publish consultations within a number of these areas, asking the general public to comment on the proposals developed. This is the initial consultation.

1. **Definition of reference rate**: In this area, it should be examined what could constitute an appropriate variant of a virtually risk-free interest rate (RFR) for SEK.
2. **Contract analysis**: In order to analyse the need for a reference rate with longer terms, different forms of financial contracts will be analysed based on whether they could function with a short-term reference rate instead of the reference rates currently available (Stibor). The purpose of this is to see whether there are arguments to suggest that more reference rates may be needed than RFR.
3. **Develop a reference rate with longer terms**: If the above analysis shows that the market needs a reference rate with longer terms, an attempt should be made to develop such proposals.
4. **The impact across the board:** If today’s reference rates are replaced with a short-term reference rate (RFR), this will have an impact across the board, principally for financial institutions but also for other parts of society. This primarily concerns issues of valuation, accounting and risk management resulting from a change to the reference rates. This should be highlighted in order to uncover any complications that have not been identified previously and which could therefore affect the choice of a new reference rate.
5. **Transition method**: The Working group assumes that Stibor will remain for a long time. How should the new reference rate be introduced to the market and how should the incorporation of a new reference rate be handled.
6. **Submission**: The Working group is tasked with submitting a recommendation on the use of a new reference rate. The Working group must also propose the administrator(s) with responsibility for the new interest rate(s). Prior to submission, a well-developed regulatory framework must also be drawn up, describing how the interest rate is to be set, how errors are to be handled, and so on. Together with the administrator of the new interest rate, further procedures must be developed that are consistent with IOSCO’s principles for benchmarks. The Working group will also draw up a final report prior to submission.

# 2. Transaction-based interest rate

## 2.1. Background

The Working group is attempting to develop an alternative reference rate that will be comparable to the reference rates already developed by other countries.

Different countries have established different short-term alternative reference rates. It is therefore unclear how the Swedish short-term alternative reference rate should be defined.

Given the origin of the work, it is desirable to develop an interest rate that cannot be manipulated and which involves a minimum of expert judgements. Several countries have therefore developed an O/N interest rate based on transactions that have taken place in the financial sector.

A major difference between the alternative reference rates currently developed is that some countries have chosen to use transactions that take place on the repo market, in other words secured transactions, while other countries have chosen to use transactions relating to the banks’ unsecured overnight borrowing.

For a long time, the international financial market has been able to handle interbank rates that have been defined in different ways, without this causing any problems. It should therefore be possible for the definition of the RFRs to vary slightly.

The authorities require the interest to be developed on the basis of a liquid market (see below) which would reduce the possibility of manipulation. The interest rate must not contain any elements of discretionary assessment.

The current Stibor is a reflection of the underlying interbank market and is a lending rate. There is no requirement, however, for a new reference rate to reflect an interbank market or to result in a lending rate. It has been common in other countries for a short-term, transaction-based reference rate to reflect what the banks are funding, in other words a borrowing rate. Examples of this are the new Ester in the eurozone and Sonia in the UK.

There are no formal requirements that stipulate that the interest rate must be stable or that it must correlate with any other interest rate. As a standard has been developed on the market whereby these new RFRs are very short-term, with O/N being the term used so far, it is likely that the interest rate is expected to co-vary with the monetary policy bank rates used.

A discussion has arisen internationally about whether it can be said that the interest rate is based on a market that is sufficiently liquid. The USA has focused on this in its choice of Sofr as RFR. This is an interest rate based on transactions on three repo markets, which together have a daily turnover of over USD 800 billion. Questions have been raised about Eonia, including that the interest rate is based on too small a transaction volume, around EUR 4 billion. Eonia’s replacement Ester is based on a daily turnover of EUR 30 billion. In Sweden, it will be difficult to obtain volumes comparable to those of the major currency areas. The purpose of basing the interest rate on a liquid market is that this would reduce the possibility of the interest rate being manipulated. It has therefore been important to try to develop as large a basis as possible in Sweden.

There is currently no clear alternative reference rate in Sweden. Stibor is used for practically all types of financial instrument that need some form of short-term reference rate. Many other countries have identified alternative interest rates they have considered possible to use, with minor adjustments where necessary. An example of this is Sonia in the UK.

## 2.2. Description of historical transaction data

The Working group has gathered data on historical transactions at the Stibor banks in order to examine the possibility of potential interest rates based on these transactions. The Riksbank received and compiled the data.

As Sweden has a tradition of using T/N, data was collected for both T/N transactions and O/N transactions. Data was also collected on three-month transactions, which did not prove to be a viable route. As there is no consensus on the use of repos or unsecured transactions as a basis, data on both types was collected. With regard to repos, it was also decided that the collateral used should be specified. This was categorised as government bond, covered bond or “unknown/other”. It was also deemed important to collect data on transactions that resulted in both borrowing and lending at the reporting banks. Five different types of potential counterparties were included in the examination. The following counterparties were used:

* 1. Banks
  2. Central banks
  3. The Swedish National Debt Office
  4. Other financial institutions
  5. Non-financial institutions

Data was also included on whether or not the transactions had been cleared at Nasdaq. In order to avoid double counting, data was included on whether the counterparty was a Stibor bank, in other words another bank that also reported transactions. To avoid duplication, lending transactions where the counterparty is a Stibor bank have been excluded.

The data collected relates to all transactions that the groups have made with companies outside the banking group. The interest rate on the transactions refers to the interest rate applicable to the counterparty. The interest rate is expressed as an annual rate with Act/360 as the interest convention.

The data collected relates to the period from 01/12/2015 to 31/12/2018. There were 774 trading days during this period. The repo rate fell during the period (on 17/02/2016) from -0.35% to -0.5%. There was also a decision to increase the repo rate (on 20/12/2018) from -0.50% to -0.25%, although this increase was not included in the sample. An exceptional monetary policy was pursued throughout the period, which can be seen as a variable factor during the period in which the Riksbank’s balance sheet increased by SEK 269 billion, or 40%. There was nothing remarkable during the period about the Stibor banks’ creditworthiness, profitability or opportunity to refinance on the market.

The opinion of the Working group is that the transaction-based interest rate should be an interest rate that reflects market pricing. Transactions with the Riksbank, where the interest rate is set using an underlying tariff, as well as repos with government bonds, have therefore been excluded.

All reported transactions have been compiled at fixing per day. During this phase of the analysis, the focus has not been on specifying an adequate method for the fixing of interest rates. The only rule that has been applied is that the rate for a given day have been calculated as a volume-weighted average of the transactions executed that day. Analyses have also been performed on the outcome of removing smaller transactions, less than SEK 100 million. A factor that has proved to be important in reducing the volatility of interest rates and the risk of manipulation is the elimination of *extremes*. Extremes refers to the transactions with the highest and lowest interest rates respectively. Analyses have been performed in order to identify whether the remaining transactions provide a sufficient basis for establishing a fixing over time.

All Stibor banks have contributed underlying data to the compilation of the analysis. The idea is that this should also be done when the proposed transaction-based interest rate is implemented and is to be calculated daily. A regulatory framework for the fixing of the interest rate will be drawn up at a later stage.

## 2.3. Selection process

The data collected relates to O/N and T/N transactions but also to transactions for three months.

In order to identify a possible alternative reference rate, the following criteria have been applied:

* Are there enough transactions to establish a fixing every day? If there are too few transactions, would any handling rules for when the basis is insufficient have a major influence on interest rate fixing.
* Is the average volume large enough? Where volumes are too small, there is a risk of a lack of confidence in the interest rate and of it being incorrectly based.
* Are there enough reporting banks every day? If there are too few banks, this reduces the credibility of the interest rate and individual banks can have too much influence over the interest rate.
* Does the interest rate move as expected? In order for there to be confidence in the interest rate on the market, it is important that the market is able to understand its movements.
* Is the interest rate too volatile to be used as a reference rate in financial contracts?
* The definition of the interest rate should be consistent, as far as possible, with how RFRs have been defined in other currency areas. The particular conditions of the SEK market must nevertheless be taken into account.

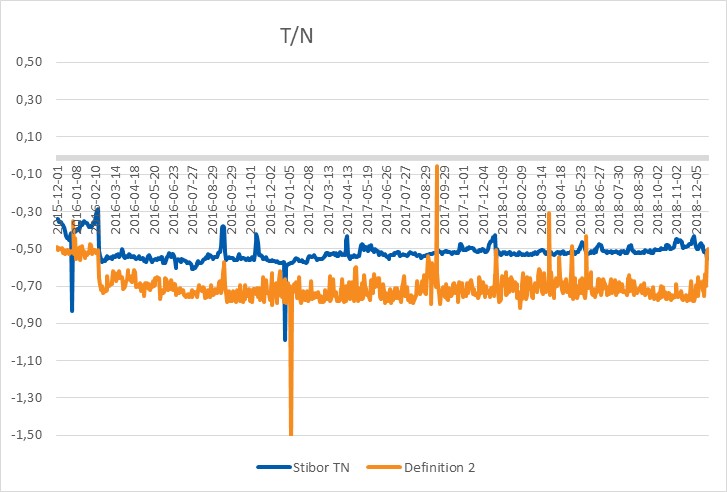
Question 1: Are the selection criteria above appropriate for developing a transaction-based short-term reference rate (RFR)? What is not relevant? Which additional criteria could it be appropriate to include?

Answer:

Data was collected for transactions with a term of three months primarily in order to see if there was any potential to develop such an interest rate. This proved not to be possible. There were more days without transactions than days with transactions and the bulk of the transactions had non-financial counterparties, which resulted in volatility of problematically large proportions. It has not been possible for three-month transactions to form a basis for an RFR in any other currency area. The entire group of three-month transactions has been excluded for this reason.

In the case of T/N transactions, these were mainly found to take the form of secured transactions. If all counterparties were included and all secured transactions, whether leading to borrowing or lending, were executed, there was an average of 39 T/N transactions per trading day and the average volume per day was 17.7 billion.

During the period examined, however, there was one day without transactions and four days with fewer than five transactions. Despite problems in obtaining assets for repo during the period, the interest rate has been relatively stable for this definition. The interest rate nevertheless sometimes deviates in a way that can be difficult to explain. The diagram below shows the interest rate trend for these transactions (Definition 2) compared with Stibor T/N:



Other types of T/N transactions had a lower daily volume and fewer transactions. They also had more days when there were no transactions and fewer banks involved in the transactions.

The Working group considers that the number of T/N transactions is too few and that these are not stable enough to be able to provide a basis for a new reference rate.

The fact that it is mainly the repo markets that would provide the basis for the reference rate is also a negative factor. In other countries, in particular the USA, their new reference rate, Sofr, has proved to be very stable except in cases of imbalances in the repo market for securities (government bonds). This should make such an interest rate less suitable as a reference rate for various forms of financial contracts. If this is a problem for the USD market, such a problem could be much greater with a smaller economy such as Sweden’s.

There is no evidence of this in the material examined, however.

The Working group has also discussed the possibility of using other interest rates as an alternative to Stibor. One of the interest rates discussed has been a form of the Riksbank’s bank rate. As it has been shown internationally that there is a strong correlation between the RFRs launched and the central bank rates, it has been considered a rational solution to use any appropriate form of the bank rate as an alternative interest rate. It has not been possible to draw up a clear definition of the bank rate in a simple way. More importantly, the bank rate is not a transaction-based rate, which is what has been requested by the FSB. The bank rate is therefore not a viable option.

Question 2: Do you support the Working group’s conclusion that interest rates based on three-month transactions and T/N transactions do not fulfil the criteria for a suitable reference rate? Are there other reasons why any of these transaction-based rates should be proposed?

Answer 2:

## 2.4. Proposed appropriate reference rates

The material collected shows that most transactions take the form of unsecured O/N transactions. The material shows unsecured transactions with banks, other financial institutions and the Swedish National Debt Office of an average of just under 42 billion per day, spread across an average of around 50 transactions. At least five transactions are recorded each day. On average, 5.5 banks (out of 7) participated every day.

The Working party considers that unsecured O/N transactions with banks, other financial institutions and the Swedish National Debt Office as described above may represent a possible alternative reference rate. (Selection A).

If the alternative reference rate is based on both borrowing and lending transactions, however, there may be unnecessarily large movement in the interest rate on days when only borrowing transactions are made. Among the transactions examined, there was an average difference of 15 points between the interest rate on borrowing and lending transactions.

Another possibility is to use unsecured O/N transactions, as described above, but based solely on transactions that generate borrowing at the reporting bank. Such a selection is more consistent with how other alternative reference rates have been defined, such as Ester and Sonia. If the selection is to consist solely of borrowing transactions, the daily volume is 25.5 billion and the number of transactions is 36. (Selection B)

In both the selections above, Selections A and B, the interest rate is strongly affected at the turn of the year. The material collected shows that the fixing for the selection of borrowing transactions fell to -4.95% at the turn of the year 17/18. Given the larger volumes of borrowing transactions, lending transactions have less of an impact and the interest rates in these two selections move in quite a similar way. The movements around the turn of the year depend, among other things, on the method used by the Swedish National Debt Office to charge what it calls the resolution fee. (Note that the outcome for the turn of the year is outside the scale).



The Working group has analysed the effect of introducing, in Selection A and B above respectively, a rule that smaller transactions are to be excluded, while transactions with high and respectively low interest rates (extremes) are also to be excluded. A threshold of SEK 100 million was set for smaller transactions. As a method for excluding extremes, the Working group tested the elimination of the 5% and the 10% of transactions with the highest and lowest interest rates respectively. It was also analysed what happens if no transactions are eliminated for days with fewer than 10 transactions, if 2 transactions are eliminated from the upper and lower range for days with 11–20 transactions, 3 transactions are eliminated from the upper and lower range for days with 21–30 transactions and so on, in a tiered progression. The purpose of the above tests is solely to analyse whether the selections could handle the exclusion of smaller transactions and extremes. The table below shows some of the data from these tests:



The elimination of smaller transactions and the elimination of extremes nevertheless mean that both these selections are able to fulfil the criteria applied by the Working group. In all these cases, there have been at least five transactions on all days of the examination.

In summary, the Working group proposes that interest rates based on either of the following two criteria for transactions at reporting banks could serve as a virtually risk-free reference rate (RFR):

|  |  |  |
| --- | --- | --- |
|  | **Selection A** | **Selection B** |
| Type | Borrowing & lending | Borrowing |
| Counterparty | Bank, Swedish National Debt Office, Other financial institutions | Bank, Swedish National Debt Office, Other financial institutions |
| Term | O/N | O/N |
| Security | Unsecured | Unsecured |

Question 3: Do you support the Working group’s conclusion that selection A (unsecured O/N transactions with banks, other financial institutions and the Swedish National Debt Office) and selection B (unsecured O/N transactions with banks, other financial institutions and the Swedish National Debt Office, but based solely on transactions that generate borrowing at the reporting bank), fulfil the criteria for an alternative reference rate?

Please give reasons for your answer.

Answer 3:

Question 4: Do you think there are other factors that have not been addressed but which may strengthen the case for or against these selections?

Answer 4:

# 3. Future work

The Working group for alternative reference rates will take note of the comments received through this consultation and through other contact with market participants. The decision on which interest rate the Working group may subsequently recommend will be taken once the consultation period has ended. During the future work of the Working group, facts may also arise that have not been taken into account previously and which provide grounds for reviewing the group’s reference rate recommendation. Similarly, the ongoing global development of alternative reference rates may have a bearing on the Working group’s future recommendation.

# 4. Summary of questions

Question 1: Are the selection criteria above appropriate for developing a transaction-based short-term reference rate (RFR)? What is not relevant? Which additional criteria could it be appropriate to include?

Answer:

Question 2: Do you support the Working group’s conclusion that interest rates based on three-month transactions and T/N transactions do not fulfil the criteria for a suitable reference rate? Are there other reasons why any of these transaction-based rates should be proposed?

Answer 2:

Question 3: Do you support the Working group’s conclusion that selection A (unsecured O/N transactions with banks, other financial institutions and the Swedish National Debt Office) and selection B (unsecured O/N transactions with banks, other financial institutions and the Swedish National Debt Office, but based solely on transactions that generate borrowing at the reporting bank), fulfil the criteria for an alternative reference rate?

Please give reasons for your answer.

Answer 3:

Question 4: Do you think there are other factors that have not been addressed but which may strengthen the case for or against these selections?

Answer 4:

1. <http://www.fsb.org/2014/07/r_140722b/> [↑](#footnote-ref-1)
2. <https://eur-lex.europa.eu/legal-content/SV/TXT/?uri=CELEX%3A32016R1011> [↑](#footnote-ref-2)
3. <https://www.swedishbankers.se/fraagor-vi-arbetar-med/arbetsgruppen-foer-alternativa-raentor/uppdragsbeskrivning-foer-arbetsgruppen/> [↑](#footnote-ref-3)
4. [*http://europa.eu/rapid/press-release\_IP-19-1418\_en.htm*](http://europa.eu/rapid/press-release_IP-19-1418_en.htm) [↑](#footnote-ref-4)
5. Nordea, Handelsbanken, SEB, Swedbank, Danske, SBAB and LF-bank [↑](#footnote-ref-5)
6. [https://www.riksbank.se/sv/penningpolitik/genomforande-av-penningpolitiska-beslut/](https://eur02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.riksbank.se%2Fsv%2Fpenningpolitik%2Fgenomforande-av-penningpolitiska-beslut%2F&data=01%7C01%7C%7C04b669cd1a7a4c70f88908d6b29f520e%7C49852dc28ad648da8a50cf51cad5c586%7C0&sdata=0tY44YvLCiI8311s4NH2tMGTG3pKS4M%2FRoD8APD7lyE%3D&reserved=0) [↑](#footnote-ref-6)
7. [https://www.riksbank.se/globalassets/media/rapporter/ovriga-rapporter/riksbankens-penningpolitiska-styrsystem---overgripande-beskrivning.pdf](https://eur02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.riksbank.se%2Fglobalassets%2Fmedia%2Frapporter%2Fovriga-rapporter%2Friksbankens-penningpolitiska-styrsystem---overgripande-beskrivning.pdf&data=01%7C01%7C%7C04b669cd1a7a4c70f88908d6b29f520e%7C49852dc28ad648da8a50cf51cad5c586%7C0&sdata=OuRoiApMIMrTTAieqRWjip7%2BHaRq6476KiR32J%2FRLZo%3D&reserved=0) [↑](#footnote-ref-7)